A Modern Style in Floristic Studies.[1] — Recent generic monographs and revisions are frequently based on gross morphology and newer systematic techniques. From time to time floristic studies report chromosome numbers or other bits of biological information, but the ordinary flora still gives little more than descriptive morphological treatments of species. This recent publication by Olov Hedberg is an outstanding example of the application in a floristic study of some newly developed taxonomic methods. Although the author calls his publication a taxonomic revision, it is floristic in treating the alpine plants of seven equatorial East African mountains. Its format, however, is more like a collection of good generic monographs. For each species, subspecies, and variety treated there is synonymy, type data, taxonomy (often including chromosome numbers), ecology (including altitudinal records), and distribution (with extensive specimen citations).

The taxonomist making a floristic study often is faced with a frustratingly difficult task because he must cover large numbers of species which, along with their relatives, could be better understood if studied over their whole range rather than by geographic segments. Since the African alpine region is a relatively homogeneous physiographic unit where it is "summer every day and winter every night", it offers fewer such difficulties than would be encountered in floristic studies in areas delimited by political boundaries. Many of the afroalpine species are most closely related to geographically distant species that are not included in the treatment. The lack of an overall evolutionary relationship among the components of the flora prevents full comparison between this investigation and a generic monograph.

Afroalpine Vascular Plants is introduced by a short historical sketch, ecological notes, taxonomic concepts and methods, and notes on the nomenclature and material used. The preliminary ecological discussion is brief, but this aspect was treated in an earlier publication[2] and additional notes are given under each taxon in the revision. Other related papers, including a pollen-analytical study, a cytological investigation of afroalpine grasses, and generic revisions, also preceded this major contribution. A chapter on vicarious taxa provides a review of the pertinent literature, cites examples of vicariads in the flora, and discusses the significance of vicariads in the understanding of evolution, especially evolutionary rates.

The largest portion of the work is in two sections of one chapter "The Flora". The first part (233 pages) of this chapter treats 44 families, 125 genera, and 298 species (some with subspecies or varieties);

[1] Afroalpine Vascular Plants: A taxonomic revision. Symbolae Botanicae Upsalienses 15 (1), 411 pp., 12 pl. 1957.

[2] Hedberg, Olov. Vegetation belts of the East African mountains. Svensk Bot. Tidsk. 45: 140-208. 1951.

42 new taxa, names, and combinations are included. Nine species hybrids are reported but not named. The second part (125 pages) is an appendix of taxonomic comments. Here the monotony of ordinary floristic presentation is relieved by nomenclature revisions, miscellaneous comments, and population analyses illustrated by tables, histograms, and scatter diagrams. Keys to families and genera are not provided. This omission restricts the floristic usefulness of the paper to persons with considerable taxonomic training. In future years the African mountains will be visited by investigators who could profitably use keys to families and genera, and it seems that the additional cost of printing keys would have been justified by extending the utility of the flora.

Afroalpine Vascular Plants is illustrated by 22 figures of line drawings, 30 figures of graphs, 15 tables, and 12 very clear half-tone plates of afroalpine plants. The line drawings adequately serve their purpose but are not artistic masterpieces. The tables, histograms, and scatter diagrams give detailed analyses of population variation. A map could have been helpful, although one is provided in the author's previous ecological paper.[2]

Field studies on the seven mountains were made in 1948. Most previous investigators had visited only one or two mountains. A minimum amount of time was spent by the author in field work, but it is evident that he made efficient use of his field opportunities. A majority of the herbarium studies were made when the author had access to Kew, the British Museum, and the Linnean Herbarium. Specimens in 15 other herbaria were also examined. The study was supported by several grants and obviously required large investments in money and time.

In investigating the afroalpine flora, Dr. Hedberg's ultimate goal is to develop a thorough phytogeographic understanding of these plants. He has now provided the taxonomic treatment upon which phytogeographic analyses can be based. He also has produced an exemplary model for floras of the future. A great array of taxonomic projects lying dormant in the high mountains of America could profitably be studied in the style of Alfroalpine Vascular Plants. — JOHN H. BEAMAN, DEPARTMENT OF BOTANY AND PLANT PATHOLOGY, MICHIGAN STATE UNIVERSITY, EAST LANSING.

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